

IN THE CLAIMS:

Please cancel Claims 1-30, and 44, without prejudice or disclaimer of subject matter.

Please amend Claims 31, 35, 37, 39, 42, and 43, as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

1-30. Canceled.

31. (Currently Amended) A moving image coding apparatus which codes time series frames constituting moving image data, comprising:

a decomposition unit that decomposes a current frame into a plurality of subbands having different frequency components;

a first extraction unit that, with a threshold set for each subband being represented by TB, extracts data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction unit that extracts data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

a motion compensation unit that generates motion vector information and predicted value information on the basis of motion compensation target data of the current frame extracted by said first extraction unit and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding unit that obtains a difference value between predicted value information generated by said motion compensation unit and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding unit that encodes, in units of bitplanes, data of the lower TB bits of each frequency component coefficient data extracted by said second extraction unit;

a multiplexing unit that multiplexes code data obtained by said first coding unit and said second coding unit; and

a decision unit that detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame, the decision unit comprising a processor,

wherein said second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said decision unit when the preceding frame had been encoded.

32. (Previously Presented) The apparatus according to claim 31, wherein said decomposition unit comprises a unit that decomposes a frame into a plurality of subbands on the basis of a discrete wavelet transformation method.

33. Canceled

34. Canceled

35. (Currently Amended) The apparatus according to claim 31, wherein the threshold set for each subband and being represented by TB is set for each subband [[is]] to be 0 for subbands of low frequency components.

36. (Previously Presented) A control method for a moving image coding apparatus which codes time series frames constituting moving image data, comprising:

a decomposition step of decomposing a current frame into a plurality of subbands having different frequency components;

a first extraction step of, with a threshold set for each subband being represented by TB, extracting data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction step of extracting data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

motion compensation means for generating motion vector information and predicted value information on the basis of motion compensation target data of a the current frame extracted in the first extraction step and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding step of obtaining a difference value between predicted value information generated in the motion compensation step and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding step of encoding in units of bitplanes data of the lower TB bits of each frequency component coefficient data extracted in the second extraction step;

a multiplexing step of multiplexing code data obtained in the first coding step and the second coding step; and

a deciding step of detecting the code data amount of the current frame multiplexed by the multiplexing step and deciding a number of bitplanes not to be encoded for the subsequent frame,

wherein the second coding step encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said deciding step when the preceding frame had been encoded.

37. (Currently Amended) A non-transitory computer-readable storage medium storing a computer program which is read and executed by a computer to function as a moving image coding apparatus which codes time series frames constituting moving image data, wherein the computer program functions as:

a decomposition unit that decomposes a current frame into a plurality of subbands having different frequency components;

a first extraction unit that, with a threshold set for each subband being represented by TB, extracts data of upper bits as motion compensation target data which excludes lower TB bits of frequency component coefficient data constituting each subband;

a second extraction unit that extracts data of lower TB bits of the frequency component coefficient data constituting each subband as non motion compensation target data;

a motion compensation unit that generates motion vector information and predicted value information on the basis of motion compensation target data of a the current

frame extracted by the first extraction unit and decoded data corresponding to the motion compensation target data obtained when a preceding frame is coded;

a first coding unit that obtains a difference value between predicted value information generated by the motion compensation unit and the motion compensation target data in the current frame and coding the difference value and the motion vector information;

a second coding unit that encodes, in units of bitplanes, data of the lower TB bits of each frequency component coefficient data extracted by the second extraction unit; and

a multiplexing unit that multiplexes code data obtained by the first coding unit and the second coding unit; and

a decision unit that detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame,

wherein said second coding unit encodes bitplanes of data of the lower TB bits excluding the number of bitplanes, from a lowest bit plane, decided by said decision unit when the preceding frame had been encoded.

38. Canceled

39. (Currently Amended) A moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus defined in claim 31, comprising:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data encoded by said second coding unit to decode the bitplanes of the data of the lower TB bits that exclude the number of bitplanes, from a lowest bit plane, decided by said decision unit, which detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame, when the preceding frame had been encoded, TB representing a threshold set for the extraction of data of each subband;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by said second decoding means and the decoded data of the upper bits of each subband obtained by said first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to said decomposition unit ~~means~~ for the frequency component data of the subband generated by said generation means.

40. (Previously Presented) The moving image decoding apparatus according to claim 39, unit that counts a time period for decoding a current frame and sets a predetermined number of code data of bitplanes, of the second code data, which ranges from a lower bitplane to an upper bitplane as data other than data to be decoded for decoding a subsequent frame, in accordance with the counted time period.

41. (Previously Presented) The apparatus according to claim 40, wherein said setting means increases the number of bitplanes which are not to be decoded with respect to a subband in which frequency components gradually decrease in frequency, when a time required to reconstruct one preceding frame is measured, and a value of the measured time is larger than a first threshold, and decreases the number of bitplanes which are not to be decoded with respect to a subband in which frequency components gradually increase in frequency, when the value of the measured time is smaller than a second threshold.

42. (Currently Amended) A control method for ~~[[a]]~~ the moving image decoding apparatus which decodes moving image data coded by a moving image coding ~~apparatus~~ method as set forth in claim 3~~[[1]]~~6, ~~characterized by~~ comprising the steps of:

a separation step of separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

a first decoding step of generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

a second decoding step of decoding the second code data encoded by said second coding unit to decode the bitplanes of the data of the lower TB bits that exclude the number of bitplanes, from a lowest bit plane, decided by said decision unit, which detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of

bitplanes not to be encoded for the subsequent frame, when the preceding frame had been encoded, TB representing a threshold set for the extraction of data of each subband;

a generation step of generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained in the second decoding step and the decoded data of the upper bits of each subband obtained in the first decoding step; and

a reconstruction step of reconstructing an image of the current frame by performing processing inverse to the decomposition step for the frequency component data of the subband generated in the generation step.

43. (Currently Amended) A non-transitory computer-readable storage medium storing a computer program which is read and executed by a computer to function as a moving image decoding apparatus which decodes moving image data coded by a moving image coding apparatus as set forth in claim 31, wherein the computer program functions as:

separation means for separating code data of an input frame into first code data corresponding to motion compensation target data and second code data corresponding to non motion compensation target data;

first decoding means for generating decoded data of upper bits of each subband in a current frame on the basis of a difference value and motion vector information with respect to data of the upper bits of each subband in the current frame obtained by decoding the separated first code data and decoded data of motion compensation data in a preceding frame;

second decoding means for decoding the second code data encoded by said second coding unit to decode the bitplanes of the data of the lower TB bits that exclude the



number of bitplanes, from a lowest bit plane, decided by said decision unit, which detects the code data amount of the current frame multiplexed by said multiplexing unit and decides a number of bitplanes not to be encoded for the subsequent frame, when the preceding frame had been encoded, TB representing a threshold set for the extraction of data of each subband;

generation means for generating frequency component data of each subband in the current frame by combining the decoded data of the lower bits of each subband obtained by the second decoding means and the decoded data of the upper bits of each subband obtained by the first decoding means; and

reconstruction means for reconstructing an image of the current frame by performing processing inverse to the decomposition means for the frequency component data of the subband generated by the generation means.

44. Canceled